

Remarks

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 1, 6 and 11-16 have been amended. No claims have been added or canceled. Thus, claims 1-20 are pending.

CLAIM REJECTIONS – 35 U.S.C. § 103(a)

Claims 1-3, 5-8, 10-13, 15-18 and 20 were rejected as being unpatentable over U.S. Patent Publication No. 2003/0147476 of Ma, et al. (*Ma*) in view of U.S. Patent Publication No. 2001/0031014 of Subramanian, et al. (*Subramanian*). For at least the reasons set forth below, Applicants submit that claims 1-3, 5-8, 10-13, 15-18 and 20 are not rendered obvious by *Ma* and *Subramanian*.

Claim 1 recites:

- transmitting a plurality of symbols to a remote device;
- receiving, from the remote device, at least a power allocation instruction and a modulation type instruction as ready to use channel state information corresponding to the plurality of symbols transmitted to the remote device; rescaling subcarrier power of a signal based on the power allocation instruction, wherein rescaling subcarrier power comprises at least determining which subcarriers, if any, are to be turned off;
- adjusting a modulation rate based on the modulation type instruction;
- calculating power values and modulation rates for active subcarriers; and
- transmitting a subsequent plurality of symbols utilizing the calculated power values and modulation rates.

Thus, Applicants claim use of a power allocation instruction and a modulation type instruction received from a remote device based on a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate based on instructions

received from a remote device. Independent claims 6, 11 and 16 similarly recite use of a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate based on instructions received from a remote device.

Applicants note that *the Office Action fails to address* the aspect of use of a power allocation instruction and a modulation type instruction received from a remote device based on a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate based on instructions received from a remote device. See Office Action, last paragraph of page 2 and first paragraph of page 3. The claims have been amended to more clearly recite this aspect of the invention. Support for the amendments can be found, for example, in paragraph 0021.

Applicants agree with the Office Action that *Ma* does not disclose rescaling subcarrier power based on channel state information. See Office Action at paragraph 3. *Subramanian* is cited to teach recalling subcarrier power based on channel state information. See Office Action at paragraph 3. However, neither of the cited references, alone or in combination, teach or suggest use of a power allocation instruction and a modulation type instruction received from a remote device based on a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate based on instructions received from a remote device. Therefore, neither *Ma* nor *Subramanian* alone or in combination can teach or suggest the invention as claimed in claims 1, 6, 11 and 16.

Claims 2, 3 and 5 depend from claim 1. Claims 7, 8 and 10 depend from claim 6. Claims 12, 13 and 15 depend from claim 11. Claims 17, 18 and 20 depend from claim

16. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 2, 3, 5, 7, 8, 10, 12, 13, 15, 17, 18 and 20 are not rendered obvious by *Ma* and *Subramanian* for at least the reasons set forth above.

Claims 4, 9, 14 and 19 were rejected as being unpatentable over *Ma* and *Subramanian* in view of U.S. Patent Publication No. 2003/0043929 of Sampath (*Sampath*). For at least the reasons set forth below, Applicants submit that claims 4, 9, 14 and 19 are not rendered obvious by *Ma*, *Subramanian* and *Sampath*.

Claims 4, 9, 14 and 19 depend from independent claims discussed above. As discussed above, no combination of *Ma* and *Subramanian* can teach or suggest use of a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate.

Sampath is cited to teach trellis coding because neither *Ma* nor *Subramanian* disclose trellis coding. Whether or not *Sampath* is properly combined with *Ma* and *Subramanian*, *Sampath* does not cure the deficiencies of *Ma* and *Subramanian* set forth above. Therefore, no combination of *Ma*, *Subramanian* and *Sampath* can teach or suggest the invention as claimed in claims 4, 9, 14 and 19.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1-20 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application.

Please charge any shortages and credit any overcharges to our Deposit Account number
02-2666.

Respectfully submitted,
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